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REMARKS/ARGUMENTS

This amendment is in response to the Office Action mailed January 3, 2005. Applicants would like to thank the Examiner for a timely and thorough review of the above-referenced patent application. Applicants would also like to thank the Examiner for the telephonic interview of January 10, 2005, a summary of which is enclosed. Independent Claims 6, 13, and 17 have been amended to more clearly define the invention, as explained more fully below. It is respectfully submitted that in light of the arguments and claim amendments, the application is now in condition for allowance.

Objections Under 35 U.S.C. § 112, Second Paragraph

The Office Action objected to Claims 6 and 17 because of the phrase "wherein the one or more feed openings are not substantially defined at the axial center of the tube." Applicants have amended Claims 6 and 17 to remove the particular phrase by substituting the following recitation "wherein the axial middle of the tube is free of any feed opening." Claim 13 has also been amended to include the recitation "wherein the axial middle of the tube is free of any feed opening." This amendment is supported by the originally filed application in Figures 2-5 and 7.

The new amendments may arguably include a negative limitation; however, according to MPEP 2173.05(i), "[s]o long as the boundaries of the patent protection sought are set forth definitely, albeit negatively, the claim complies with the requirements of 35 U.S.C. 112, second paragraph." Furthermore, MPEP 2173.05(i) cites *In re Wakefield*, 164 USPQ 636, 638, 641 (CCPA 1970) in which a claim limitation that includes the phrase "free from" in order to patentably define over the characteristics of the prior art product was considered definite because each recited limitation was definite. The recitation "wherein the axial middle of the tube is free of any feed opening" definitely recites that one or more feed openings are not located in the middle of the tube of Claims 6, 13, and 17. Accordingly, Applicants respectfully submit that the amended Claims 6 and 17 no longer include informalities and that the objections to Claims 6 and 17 should be withdrawn.

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Rejections Under 35 U.S.C. § 112, First and Second Paragraphs

The Office Action rejected Claims 6-12 and 17-20 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicants have amended Claims 6 and 17 to delete the phrase "wherein the one or more feed openings are not substantially defined at the axial center of the tube" which the Office Action stated was subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Applicants have amended Claims 6, 13, and 17 to include the phrase "wherein the middle of the tube is free of any feed opening" which Applicants respectfully submit is described in the specification in such a way that conveys to one skilled in the relevant art that the Applicants, at the time the application was filed, did have possession of the claimed invention. In all the illustrations of the claimed invention, specifically Figures 2-5 and 7, the middle of the tube is free of feed openings. Neither the specification nor the drawings describe the claimed invention as including feed openings in the middle of the tube. The specification does state on page 3, lines 16-18 and elsewhere in the specification that the control surfaces, which may include feed openings, "extend a predetermined distance from the inner periphery of the tube towards the middle of the tube." However, the specification does not disclose any feed openings in the middle of the tube. Accordingly, Applicants respectfully submit that the amended Claims 6 and 17, and the Claims that depend therefrom, are no longer indefinite and that the rejection of Claims 6-12 and 17-20 should be withdrawn.

The Office Action also rejected Claims 6-12 and 17-20 under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicants have amended Claims 6 and 17 to delete the phrase "wherein the one or more feed openings are not substantially defined at the axial center of the tube" which the Office Action stated was not clear. Applicants have amended Claims 6, 13, and 17 to include the phrase "wherein the axial middle of the tube is free of any feed opening" which Applicants respectfully submit particularly points out and distinctly claims a mixing zone that does not have any feed openings in the middle of the tube. Accordingly, Applicants respectfully

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submit that the amended Claims 6 and 17, and the Claims that depend therefrom, are no longer indefinite and that the rejection of Claims 6-12 and 17-20 should be withdrawn.

Rejections Under 35 U.S.C. § 102(b) – King

The Office Action rejected Claims 13-16 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,808,007 to King ("the King '007 patent"). To the extent that this rejection would be applied against the claims as amended, Applicants respectfully traverse.

The King '007 patent discloses an apparatus for mixing materials of widely disparate viscosities by providing an entry port 15 for a second flow located in the center of the tubular member 1 for the first flow. Applicants have amended Claim 13 to specifically claim "wherein the axial middle of the tube is free of any feed opening." As stated above, the amendment is supported by the figures of the present application, in particular Figures 2-5 and 7, and Applicants respectfully submit that the amendment complies with the written description requirement and particularly points out and distinctly claims the subject matter which Applicants regard as the invention.

The King '007 patent states that it is crucial for the entry port 15 to be positioned at a point substantially coincident with the point of substantial mutual tangency of the orifices 5 and 6, which is the center of the tubular member 1 (col. 3, lines 53-64 of the King '007 patent). This location in the center of the tubular member 1 is crucial because it greatly enhances the molecular fusion between the low viscosity and high viscosity fluids (col. 3, lines 60-62 of the King '007 patent). Amended Claim 13, and the Claims that depend therefrom, specifically claim that the axial middle of the tube is free of any feed opening. Therefore, Applicants respectfully submit that the amended claims are not anticipated by the King '007 patent. Accordingly, Applicants respectfully request that the rejection of Claims 13-16 be withdrawn.

CONCLUSION

In view of the foregoing remarks, Applicants respectfully submit that all of the claims of the present application are in condition for allowance. It is respectfully requested that a Notice of Allowance be issued in due course. Examiner Halpern is encouraged to contact Applicants'

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undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that fees for extensions of time or for net addition of claims are required. However, in the event that additional extensions of time or fees for net addition of claims are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fees required are hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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